

Claims

1. Mobile concrete pump comprising a building frame (22) seated on a structure (12) of a truck chassis (10) and comprising two longitudinal side members (50) mutually spaced apart by a free space (52) and resting on said structure (12), for receiving a supporting device (38), a core pump (24) with material supply container (32) and functional units which form a distribution mast (36), as well as a drive assembly (42) for actuating the functional units, which are arranged together with the core pump (24) in the free space (52) between the two longitudinal side members (50),

thereby characterized,

that the building frame (22) comprises a floating bearing (54) linking said side members across the free space, as well as a fixed bearing (56) arranged at the rear end of the building frame for releasably supporting the core pump, which is pre-assembled in modular manner, and the material supply container (32) rigidly connected with the core pump.

2. Concrete pump according to Claim 1,

thereby characterized,

that the prefabricated core pump (22) can be introduced from the back end of the building frame (22) through the free space (52) and is connectable with the bearings (54, 56).

3. Concrete pump according to Claim 1 or 2,

thereby characterized,

that the building frame (22) includes slide rails leading to the bearings for facilitating the installation and removal of the core pump (24).

4. Concrete pump according to one of Claims 1 through 3,
thereby characterized,
that the floating bearing (54) is a cross beam, bridging over
the free space (52), upon which the core pump (24) rests.
5. Concrete pump according to one of Claims 1 through 4,
thereby characterized,
that the core pump (24) is supported, in the area of the
floating bearing (24), on the sides against the longitudinal side
members (50), preferably by rubber elastic vibration absorbers.
6. Concrete pump according to one of Claims 1 through 5,
thereby characterized,
that the core pump (24) is secured against lifting off from
the floating bearing (54).
7. Concrete pump according to Claim 6,
thereby characterized,
that, for securing against lifting off, the core pump (24) is
connectable with the floating bearing (54) by a capture or lock
mechanism connection, preferably a capturing hook (56), bent lever
(56'), latch pin (56''), or plug wedge (56''').
8. Concrete pump according to one of Claims 1 through 7,
thereby characterized,
that the core pump is a hydraulically driven piston pump,
resting with its water box (28) upon the floating bearing (54).
9. Concrete pump according to one of Claims 1 through 8,
thereby characterized,

that the floating bearing (54) is positionable upon the longitudinal side members (50) in various locations spaced apart from each other in the longitudinal direction.

10. Concrete pump according to one of Claims 4 through 9,
thereby characterized,

that the cross beam forming the floating bearing (54) is rigidly connected to the longitudinal side members (50), preferably by threaded fastener or welding.

11. Concrete pump according to one of Claims 1 through 10,
thereby characterized,

that the material supply container includes at least one extension arm (59) releasably and rigidly connectable with the fixed bearing (56) of the building frame (22).

12. Concrete pump according to Claim 11,
thereby characterized,

that the fixed bearing (56) includes a preferably rubber elastic cushioning or shock absorbing element.

13. Concrete pump according to one of Claims 1 through 12,
thereby characterized,

that the building frame (22) includes mounting means (62) for releasably receiving carrier frames (48) of various sizes, the carrier frames bridging over the free space (52), and modularly equippable with various drive subassemblies.

14. Mobile concrete pump comprising a building frame (22) adapted to be seated on a structure (12) of a truck chassis (10) and comprising two longitudinal side members (50) mutually spaced

apart by a free space (52) and resting on said chassis structure (12), for receiving a supporting device (38), a core pump (24) with material supply container (32) and functional units which form a distribution mast (36), as well as a driving assembly (42) for actuating the functional units, which are arranged with the core pump (24) in the free space zone (52) located between the two longitudinal side members (50),

thereby characterized,

that the building frame (22) comprises mounting means (62) designed to releasably support carrier frames (48) of different sizes which carrier frames bridge over said side members across the free space (52) and which carrier frames may be equipped in modular manner with various drive subassemblies (42).

15. Mobile concrete pump according to one of Claims 1 through 14, thereby characterized,

that hydraulic and/or electric control and circuit elements for the drive subassemblies and for the functional units connected thereto are assembled into a control module (94) provided at the rearward area of the building frame (22).

16. Concrete pump according to Claim 14, thereby characterized,

that the control module (94) includes assembled hydraulic valves and/or a hydraulic reservoir (97) assembled into a hydraulic controlled block (94) as necessary for control.

17. Concrete pump according to Claim 15 or 16, thereby characterized,

that the hydraulic lines leading from the control module (94) to the drive subassemblies (42) run on the longitudinal side members (50) of the building frame (22).

18. Concrete pump according to one of Claims 1 through 17, thereby characterized,

that the inner surfaces (60) of the longitudinal side members (50) facing the free space (52) are each provided with a rigidly connected mounting rail (62) extending in the longitudinal direction, that at least two journal bearings (58) are provided spaced apart from each other on the longitudinal side members (50) projecting transverse in the free space (62) for receiving the carrier frame (48) for the drive subassemblies (52) and that the journal bearings (58) each carry a base plate (66), with which they are releasably securable to the mounting rails (62).

19. Concrete pump according to Claim 18, thereby characterized,

that the mounting rails (62) include screw bore holes (64) open transverse to the free space (52) provided spaced apart from each other in the longitudinal direction in defined detent separations, and that the base plates (66) exhibit at least two through holes (68) provided spaced apart from each other corresponding to the detent separation of the screw bore holes (64) for securing screws (70).

20. Concrete pump according to Claim 19, thereby characterized,

that the mounting rails (62) have a square cross section profile, and that the base plates (66) on their broad side opposite to the journal bearings (58) exhibit an edge open profile

recess (72) complimentary to the square profile, with which they are form fittingly seatable upon the mounting rails (62) and securable thereto via the securing screws (70).

21. Concrete pump according to Claim 20,
thereby characterized,

that the journal bearings (58) are provided eccentrically relative to the profile recess (72) and, in the longitudinal direction, are preferably centrally located on the base plate (66).

22. Concrete pump according to Claim 20 or 21,
thereby characterized,

that the through holes (68) are provided centrally relative to the profile recess (72), and eccentrically in the longitudinal direction, spaced apart from the journal bearings, on the base plate (66).

23. Concrete pump according to one of Claims 18 through 22,
thereby characterized,

that the journal bearing (58) is welded to the base plate (66).

24. Concrete pump according to Claim 23,
thereby characterized,

that the journal bearing (58) includes a flange (74) and a backwards facing plug pin (76) and is inserted with the plug pin (76) in the bore (78) of the base plate (66) until abutment with the flange (74), and in this position is welded with the base plate.

25. Concrete pump according to one of Claims 18 through 24,
thereby characterized,
that the mounting rails (62) are welded to the longitudinal
side members (50).
26. Concrete pump according to one of Claims 18 through 25,
thereby characterized,
that a bearing eye (84) is seated on each journal bearing
(58), which is securable to the carrier frame (48). preferably by
screwing.
27. Concrete pump according to Claim 26,
thereby characterized,
that the bearing eye (84) is padded towards the journal
bearing with a preferably elastic deformable plastic material
(92).
28. Building frame for concrete pumps with two longitudinal side
members (50) provided spaced apart sideways from each other,
thereby forming a free space (52) for receiving a core pump (24),
to which side members respectively at least two journal bearings
(58) are provided, spaced apart from each other, projecting
transverse in the free space (52), for receiving a carrier frame
for a drive subassembly (42),
thereby characterized,
that on the free space (52) facing inner surface (60) of the
longitudinal side members (50) respectively one mounting rail (62)
is rigidly provided extending in the longitudinal direction, and
that the journal bearing (58) respectively carries a base plate
(66), with which it is releasably securable to the mounting rails
(62).

29. Building frame according to Claim 28,
thereby characterized,

that the mounting rails (62) include multiple screw holes (64), open transverse to the free space (52), spaced apart from each other in the longitudinal direction in defined locking or detent separations, and that the base plates (66) include at least two through holes (68) for securing screws (70) provided spaced apart from each other in the same detent separation as the screw bore holes (64).

30. Building frame according to Claim 29,
thereby characterized,

that the mounting rails (62) have a square profile, and that the base plates (66) exhibit on their broad side opposite to the journal bearing (58) an edge open profile recess (72) complimentary to the square cross section, with which they are form-fittingly seatable upon the mounting rails (62) and securable thereto with securing screws (70).

31. Building frame according to Claim 30,
thereby characterized,

that the journal bearings (58), are located eccentric with regard to the profile recess (72), and are provided preferably central in the longitudinal direction on the base plate (66).

32. Building frame according to Claim 30 or 31,
thereby characterized,

that the through hole (68) is centrally located with regard to the profile recess (72) and eccentric in the longitudinal

direction, spaced apart from the journal bearing, on the base plate (66).

33. Building frame according to one of Claims 28 through 32, thereby characterized, that the journal bearing (58) is welded to the base plate (66).

34. Building frame according to Claim 33, thereby characterized, that the journal bearing (58) includes a flange (74) and a rearwards facing plug pin (76), and is inserted with the plug pin (76) until abutment of the flange (74) in the bore hole (78) of the base plate (66), and there is welded to the base plate.

35. Building frame according to one of Claims 28 through 34, thereby characterized, that the mounting rails (62) are welded to the longitudinal side members (50).

36. Building frame according to one of Claims 28 through 35, thereby characterized, that on each journal bearing (58) a bearing eye (84) is seated, which is releasably securable, preferably by screwing, upon the carrier frame (48).

37. Building frame according to Claim 36, thereby characterized, that the bearing eye (84) is cushioned or padded towards the journal bearings with a preferably elastic deformable plastic material (92).

38. Building frame according to one of Claims 28 through 37,
thereby characterized,

that the free space (52) is bridged over by a cross beam (54)
rigidly securable to the longitudinal side members (50), on the
inner surface thereof (60), which cross beam forms a floating
bearing as support for the core pump (24).

39. Building frame for concrete pumps with two longitudinal side
members (50) provided spaced apart sideways from each other
thereby forming a free space (52) for receiving a core pump (24),
to which side members respectively at least two journal bearings
(58) are provided spaced apart from each other projecting
transverse in the free space (52) for receiving a carrier frame
for a drive subassembly (42),

thereby characterized,

that the free space (52) is bridged over by a cross beam (54)
rigidly secured to the inner surface (60) of the longitudinal side
member (50), which cross beam forms a floating bearing support for
the core pump (24).

40. Building frame according to claim 38 or 39,
thereby characterized,

that the cross beam (54) is welded to the longitudinal side
members (50).

41. Building frame according to one of Claims 38 through 40,
thereby characterized,

that the cross beam (54) bears a flat plastic coating or
layer on its bearing surface.

42. Building frame according to one of Claims 38 through 41,
thereby characterized,
that the core pump (24) rests upon the cross beam (54) by its
water box (28) located between the two drive cylinders (26) and
the two conveyor cylinders (30).
43. Building frame according to one of Claims 38 through 41,
thereby characterized,
that the cross beam includes a securing element for securing
of the core pump against lifting.
44. Building frame according to one of Claims 38 through 43,
characterized by a fixed bearing (56) rigidly connectable
with the core pump (24) provided in the longitudinal direction
behind a rearward mast support block, preferably in the area of
the materials supply container.
45. Building frame according to Claim 44,
thereby characterized,
that the fixed bearing (56) includes a coupling mechanism
(56a - h) for producing a releasable rigid connection.
46. Concrete pump for building frame, characterized by one or
more of the characteristics disclosed in the specification
and/or figures.